ORIGINAL RESEARCH PAPER

Maxillofacial Surgery

CASE REPORT: CHRONIC SUPPURATIVE OSTEOMYELITIS OF MANDIBLE

KEY WORDS: Osteomyelitis, chronic, surgery, clindamycin, debridement

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ABSTRACT

Background: This case report describes the successful surgical treatment of chronic suppurative osteomyelitis (CSO) of the mandible in a 35 year old women. **Methods:** Treatment included a pre-surgical course of antibiotics (clindamycin 300mg, p.o. q.i.d. for two weeks) followed by removal of involved tooth, surgical debridement of the affected bone, the intra-oral draining sinus, and resection of the cutaneous sinus tract. Specimens were taken for bacterial cultures and antibiotic sensitivity testing, and the resected tissue sent for histopathological review. **Results:** On clinical and radiographic review at three months, the patient was well, completely symptom free and the osteomyelitis had fully resolved. **Conclusion:** This case report demonstrates the typical features of CSO. The combination of antibiotic therapy and surgical debridement was effective in the treatment of chronic suppurative osteomyelitis of the mandible utilizing general anesthesia.

INTRODUCTION

This case shows a case of chronic osteomyelitis along with an extraoral fistula. The patient was treated by excising the intraoral lesion first followed by excision of the extraoral fistula under general anesthesia. The follow ups showed proper healing of the wound and complete elimination of the bony lesion.

Osteomyelitis is defined as an osseous inflammation associated with microbial infection. Historically, patients often presented with chronic osteomyelitis that was characterized by progressive osseous destruction and sequestrum formation. (https://pubmed.ncbi.nlm.nih.g ov/33006465/) Osteomyelitis is an inflammatory process accompanied by bone destruction and caused by an infecting microorganism. The infection can be limited to a single portion of the bone or can involve several regions, such as marrow, cortex, periosteum, and the surrounding soft tissue. (https://pubmed.ncbi.nlm.nih.gov/15276398/)

Case Report

This case presents a case of chronic mandibular osteomyelitis with fistula. A 35 year old female patient reported to the department with pain and pus discharge from the right lower back region of the face since 2-3 months and non-healing extraction socket since 3 months.

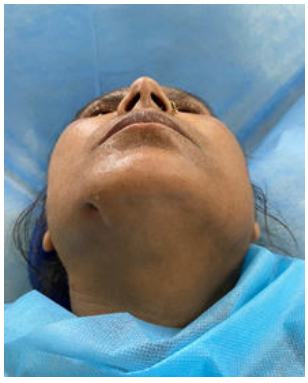
History dates back to 3 months when patient had pain lower right side tooth for which she took painkillers on her own, after 1 month she noticed pus discharge extra-orally for which she consulted a doctor in dispensary in Chandigarh where her 45 and 46 were extracted and was reassured but the pus discharge didn't discontinue. There was a small fistula in the vestibule of extracted tooth noticed 12 days following extractions after which she reported to the department with non-healing intra oral and extra oral fistula along with pus discharge. It was tender to touch with no history of fever and loss of weight.

Patient was under medication for joint pain (patient could not recall which medication). Patient was a vegetarian, non-alcoholic, non-smoker not a tobacco chewer with no reported allergies.

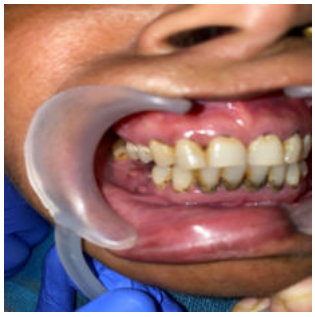
Patient was co-operative, conscious and well oriented with time, place and person with normal gait, build and moderately nourished. Vitals were normal, temperature being afebrile, blood pressure of 132/82 mm of Hg and pulse 82/min and respiratory rate being 16-18 breaths/min along with normal speech.

Local Examination

Local examination revealed facial symmetry, no oedema or extra oral swelling was evident over facial and neck regions with no deviation on jaw opening and closure and a mouth opening of approx. 2.5 fingers. A fistula was seen over the lower border of mandible with pus discharge. On palpation, fistula is tender with no sensory deficit with normal TMJ functioning, non-tender, no clicking heard submandibular lymph nodes are palpable.

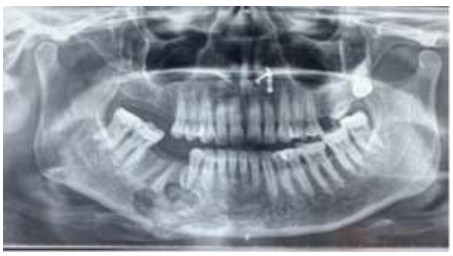


On intra-oral examination, mucosa was reddish pink, tongue, floor of mouth and palate normal and fistula was seen with respect to the vestibule 45. On palpation, tender over fistula region, visible pus discharge, with a poor oral hygiene.

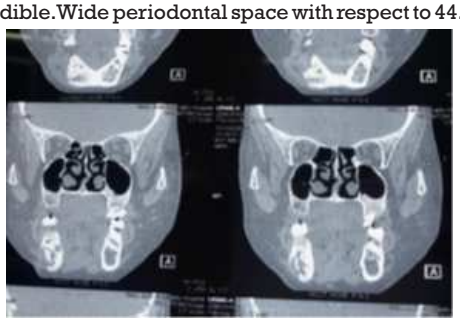


Investigations

Upon investigations, CBC, RFT and LFT were within the normal limits.



Radiographic assessment shows Ill well- defined radiolucency seen below extraction socket of 45, 46 with dense trabecular pattern. Two foci of radio-opacity suggestive of dead bone or sequestra surrounded by radio opacity seen. Periosteal bone form seen along lower border of mandible.Wide periodontal space with respect to 44.



CBCT shows bone destruction involving anterior cortex of body of mandible on right side. A 9-10 mm sized sequestrum seen in body of mandible.

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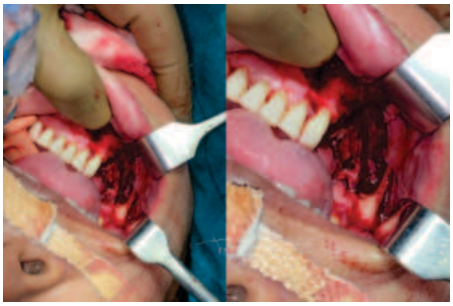
A clinical diagnosis of CSO of the mandible was made. Management entailed a two-week course of oral clindamycin (300mg p.o. q.i.d., followed by surgical debridement of the affected area, removal of the tooth and resection of the cutaneous sinus tract utilizing intravenous sedation, at which time histological samples and microbial cultures were also taken. Clindamycin was chosen because of its broad antibacterial coverage, including activity against anaerobic organisms, commonly present in chronic 'mixed' odontogenic infections, and its established potential to penetrate well, and achieve high therapeutic concentrations, in bone.

Before initiating the procedure, patient was counselled, and well informed of the procedure. Thereafter, 1 drop per nostril of nasal Otrivin was administered bilaterally. 4 ml of 4% xylocaine, i.e. 16 mg along with oxygen was nebulized. A bilateral nasal packing with thin packs soaked in 2% lignocaine with adrenaline was given. Thereafter, an application of 2 ml jelly (2% lignocaine) on posterior part of tongue was given.

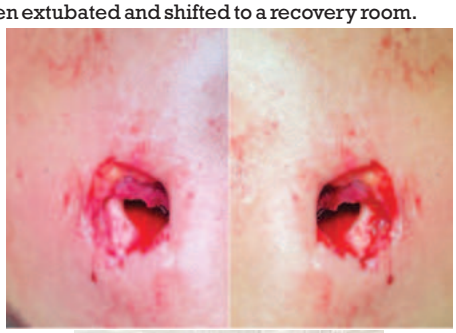
For the purpose of sedation, firstly monitors were attached and patient positioned supine. Administration of 0.5-1mg midazolam, 0.5-1mcg/kg fentanyl and 1mg/kg dexmedetomidine over 10 mins was done. Removing the nasal packs, Nasopharyngeal Airway Device (NPA) inserted and intubation completed orally with fiberoptic bronchoscope when the patient was awake but consciously sedated. Later a combination of 1mg/kg propofol, 2ug/kg fentanyl, 0.5 mg/kg atracurium and sevoflurane 1-2% was given along with oxygen and nitrous oxide in ratio of 1:2.

Patient was then positioned supine with head extended, throat packed with ribbon gauze and operative area prepared with hexi scrub and subsequently isolated with sterile drape sheets.

1:2 lac adrenaline was injected in right buccal space. A crevicular incision from mesial of 43 to distal of 47 along with a crestal incision over 46 ad mesial and distal releasing incisions were made. Full thickness mucoperiosteal flaps raised from both buccal and lingual aspects ad lesion exposed from exterior, posterior and inferior boundaries. Lesion was entered through the lateral cortical plate with the help of a bur. Vertical and horizontal cuts were made after which bony chunks were removed with a chisel and mallet. Later the entire area of lesion was thoroughly curettaged with copious irrigation. All sharp bony margins were rounded off with the help of an acrylic trimmer.



Extra-oral fistula was subsequently excised by approaching through the intra-oral connection followed by proper curettage using a curette and a bur. The wound was then closed. Primary closure was done in 2 layers- inner layer closed with 4-0 vicryl suture whereas outer layer was sutured with a 3-0 vicryl suture. Prior to the primary closure of the intra-oral lesion, corrugated drain was placed. An extra-oral pressure pack was placed with Neosporin ointment. Patient was then extubated and shifted to a recovery room.



RESULTS

The results of the microbiological cultures showed normal oral flora and some aerobic Gram-negative bacilli, which were sensitive to clindamycin. This was consistent with the microbiological findings reported by G[redacted]

DISCUSSION

The usual characteristics of CSO, a rare but well-documented potential consequence of persistent odontogenic infections, which dentists may more commonly face, are illustrated in this case report. The treatment involved both surgical debridement and an antibiotic course. This aligns with the published protocols of Koorbusch et al [2]., Kim and Jang [3], and van Merkesteyn et al[4]

It has been proposed that two weeks is the bare minimum of antibiotic treatment for CSO.[5]. Bamberger [6], however, has proposed that a minimum of four weeks is recommended. Hyperbaric oxygen has also been recommended in several publications as a therapy for this disease, particularly in the irradiated mandible.[3,7,8]

In this instance, the patient was prescribed oral clindamycin for four weeks, which worked well when combined with surgical debridement.

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